



BOSCH

Invented for life



**Bosch solutions
and components**
for off-highway applications

The full programme of diesel engines



Off-highway diesel engines with a power output of less than 560 kW



System	Conventional fuel-injection systems	Common-rail systems
Description	<p>Bosch has been a supplier of OEM products and replacement parts for conventional systems for more than 90 years. These systems comprise of nozzle-holder assemblies and mechanically/electronically controlled inline pumps or distributor pumps. Conventional systems are particularly robust. This is why they are often used in a range of off-highway applications. The injected fuel quantity can be quickly, evenly and simply varied.</p>	<p>Bosch offers a broad spectrum of common-rail systems that delivers state-of-the-art answers to typical requirements. Bosch common-rail injectors for the off-highway segment work with pressures between 1 400 and 2 700 bar. The various types of common-rail pumps are suitable for use in a wide range of applications.</p>
Applications		

Overview of customer benefits

- ▶ Same product in aftermarket as in the OEM series, thus ensuring quality and longer maintenance intervals
- ▶ Fair-value-oriented customer solutions with new or remanufactured goods or replacement parts for repairs
- ▶ Worldwide production network

Bosch is a leading manufacturer of components for diesel engines in both the on-highway and off-highway segments and continually sets new standards with its diesel innovations. Bosch offers a comprehensive portfolio of high-quality components and systems for both segments. A large proportion of off-highway diesel engine manufacturers take advantage of this and benefit from excellent power dynamics, low emissions and low fuel consumption.



Large diesel engines with a power output of more than 560 kW



System	Conventional fuel-injection systems	Modular common-rail systems MCRS
Description	Bosch can draw on over 40 years of experience with mechanical fuel-injection systems for large engines. The Bosch PF single injection pump with a nozzle holder assembly for each engine cylinder is a particularly successful example among these. Due to the robust design, the PF pump can be operated with a large selection of fuel types.	In comparison with conventional fuel injection systems, the MCRS modular common-rail systems from Bosch reduce fuel consumption by up to 8% with a simultaneous reduction of running noise. They are designed for pressures between 1 600 and 2 200 bar and engines with up to 20 cylinders. The injection pressure in operation is independent of engine speed. With an operational lifespan of up to 20 000 hours, the components are particularly robust.
Applications		

Overview of customer benefits

- ▶ Stringently fulfils the OEM specifications
- ▶ Product options for use with heavy fuel oil (HFO) with full power output capacity
- ▶ Robust and reliable, thanks to proven series-production technology
- ▶ Worldwide production network



Bosch expertise for installation, conversion and retrofitting

Whether they use starters or spark plugs, many manufacturers of diesel engines and related applications rely on components from Bosch.

With good reason: testing procedures and quality assurance processes at Bosch go far beyond all legally prescribed standards. At the same time, customers benefit from a comprehensive portfolio of Bosch products that provides ideal solutions for almost every need.



Technical specifications	HEF109-M 24V	HEF109-MP 24V	HEF109-L 24V	HEP109-MP 24V (2x)	HEP109-L 24V (2x)	HEP109-MP 24V (3x)	HEP109-L 24V (3x)
Peak mechanical performance (at -20 °C and SoC*=80%)	7.62 kW	8.24 kW	10.0 kW	16.5 kW	20.0 kW	24.7 kW	30.0 kW
Typical application areas up to engine displacement (diesel)	... 16 l	... 24 l	... 30 l	... 48 l	... 60 l	... 72 l	... 90 l
Typical application areas up to engine displacement (gas/petrol)	... 32 l	... 48 l	... 60 l	... 96 l	... 120 l	... 144 l	... 180 l
Maximum battery low temperature test current EN	1 300 CCA	1 500 CCA	2 000 CCA	3 000 CCA (2x1 500 CCA in parallel)	4 000 CCA (2x2 000 CCA in parallel)	4 500 CCA (3x1 500 CCA in parallel)	6 000 CCA (3x2 000 CCA in parallel)
Starter mass	11.6 kg	14 kg	17 kg	2x 16.5 kg	2x 19.5 kg	3x 16.5 kg	3x 19.5 kg
Pole housing diameter	109 mm	109 mm	109 mm	109 mm	109 mm	109 mm	109 mm
Installation length (starter flange/commutator bearing cap)	287.5 mm	287.5 mm	319.5 mm	287.5 mm	319.5 mm	287.5 mm	319.5 mm
Typical control current	2 A	2 A	2 A	2x 2 A	2x 2 A	3x 2 A	3x 2 A

Applications



* SoC = state of charge



M18 industrial spark plugs

	7305	7306	7308
Type	MR 3 DII 360	MR 3 DPP 330	MR 3 DII 360
Type number	0 242 356 512	0 242 356 504	0 242 356 515
Wrench size	22.2 mm (7/8")	22.2 mm (7/8")	20.8 mm (13/16")
Thread	M 18 x 1.5 mm	M 18 x 1.5 mm	M 18 x 1.5 mm
Thread length	20.6 mm (13/16")	20.6 mm (13/16")	20.6 mm (13/16")
Precious-metal center electrode	Iridium	Platinum / Iridium	Iridium
Precious-metal ground electrode	Iridium	Platinum	Iridium
Electrode gap	0.3 mm (0.011")	0.3 mm (0.011")	0.3 mm (0.011")
Resistance	6 kΩ	3 kΩ	6 kΩ
Adjustable electrode gap	Yes	No	Yes

Re-Gapping Tool for M18 industrial spark plugs



During their operation, industrial spark plugs wear out and the electrode gap increases. This would result in misfires. The Bosch re-gapping tool is a professional tool for accurate readjustment of the electrode gap of Bosch M18 Iridium industrial spark plugs to increase life.

Type number: 0 986 600 001

M14 industrial spark plugs



	7315	7322
Type	WR 3 CII 360	FR 3 CII 360
Type number	0 242 255 519	0 242 255 518
Wrench size	20,8 mm (13/16")	16 mm (5/8")
Thread	M 14 x 1,25 mm	
Thread length	19 mm (3/4")	
Precious-metal center electrode	Iridium	
Precious-metal ground electrode	Iridium	
Electrode gap	0,3 mm (0,011")	
Resistance	6 kΩ	
Adjustable electrode gap	Yes	

Customer benefits at a glance

- ▶ First-class ignitability for high performance due to specifically developed precious-metal alloys at the center and ground electrode
- ▶ Outstanding engine protection due to nickel-plated housing and thread
- ▶ Hassle-free spark plug replacement due to factory-set electrode gap
- ▶ High wear resistance due to a highly heat-conductive center electrode
- ▶ Reliable thermal characteristics due to heat-shrink assembly

Generator technology for stringent demands

Generators ensure uninterrupted power supply independent of public power grids. In many cases, they are used as emergency power supplies to protect companies, buildings and institutions such as hospitals against power outages. When a connection to a power grid is not an option, generators are used in continuous operation as power supply systems for various different applications – for example, as main domestic power suppliers, in industrial applications, in mining operations and on construction sites. Bosch offers a wide range of components for diesel and gas generators for these and similar scenarios.

Diesel generators

When it comes to generators, the demands on diesel technology are particularly high, as they sometimes have to deliver uninterrupted power supplies around the clock. As one of the leading manufacturers of components for diesel engines, Bosch can draw on its particular expertise in the field of diesel technology, providing solutions for diesel generator components. With this, Bosch products ensure a long service life for generators.



Gas generators

Gas generators around the world are fitted with high-quality components from Bosch. For instance, Bosch industrial spark plugs ensure the reliability of generators and assure continuous and dependable power output.

LEDI (Large Engine Database Information)

Anyone looking for a comprehensive overview of currently available Bosch products and systems for large engines, or wanting to compare Bosch products with OEM products, should take a look in LEDI – Large Engine Database Information. This is the fastest and easiest way to find the answers to your questions.



The platform for all Bosch partners in the world of large engines

LEDI is a useful technical platform that enables Bosch partners to compare various components and systems. Bosch partners can quickly and easily find out where and how the components are installed. On top of this, LEDI is a source

of valuable cross-references such as exploded views and technical documentation and provides information about components and systems currently available from the Bosch product portfolio.

What drives you, drives us

Bosch technologies are used worldwide in almost all vehicles. People, and assuring their mobility, is what we are focused on.

Therefore, we have dedicated the last 125 years of pioneering spirit and expertise in research and manufacturing to achieving this.

We continue to work on our unique combination of solutions for spare parts, diagnostic devices, workshop equipment and services:

- ▶ Solutions for efficient vehicle repairs
- ▶ Innovative workshop equipment and software
- ▶ The world's most comprehensive range of new and replacement parts
- ▶ Large network of wholesale customers, for quick and reliable parts supply
- ▶ Competent hotline support
- ▶ Comprehensive educational and training offers
- ▶ Targeted sales and marketing support

Find out more at:
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